THE IMPORTANCE OF MOBILE TECHNOLOGIES IN TEACHING INFORMATICS

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Abstract: This thesis discusses methods of teaching informatics in institutions based on the use of mobile devices (smartphones, tablets and other portable computers) and cloud technologies that provide information exchange between students and the teacher. Based on the didactic tasks that arise in the learning process, appropriate teaching methods are proposed that are focused on the work of students with different types of information and the development of software products using mobile devices.
Keywords: mobile learning; mobile technologies; mobile devices; computer science teaching methodology.

INTRODUCTION

Mobile devices and cloud technologies penetrate into all spheres of human activity. With the help of personal mobile devices, the efficiency of access to information is significantly increased due to the presence of a module for connecting to the Internet, and their functionality sometimes exceeds the capabilities of stationary computers due to built-in photo and video cameras, a microphone, a tilt sensor, geolocation and others. In society, the priority is changing from “it is important to know” to “it is important to have access to information”.

One of the modern and promising forms of presentation of educational material is augmented reality. Considering the use of augmented reality technology as a learning tool, the researchers note that it “gives students the opportunity to see the world around them in a new way and deal with real problems in the context with which they are already associated”. Despite the development of technologies and technical capabilities of smartphones, the use of augmented reality applications in education is difficult for several reasons [1]:

– cognitive overload (according to the study, students are often overloaded with the complexity of learning activities);

– the effectiveness of the use of augmented reality applications strongly depends on the skills of the teacher [3];

– technical problems [2].

MAIN PART

Game technologies and "gamification" of the learning process finds new ways of development through the use of mobile devices as a technical platform. Scenarios for using this format of learning are characterized by both the involvement of the teacher directly in the game process and the autonomy of the teacher and students. The inclusion of a gaming form of learning using mobile devices can help achieve higher educational results [2] by increasing motivation [1].

The researchers note that the key element of the quest is a list of links to resources that are necessary to complete the task and are selected by the teacher in advance. According to the duration of work with the quest, short-term and long-term ones are distinguished, and regardless of the type of quest, it has a certain structure [3]:

• Introduction. At this stage, students should understand what they will learn and do in the course of the quest. The teacher proposes a script, story, or problem on a specific topic in a way that will keep students interested.

• Exercise. This is the main stage of any quest. The teacher offers a pre-designed task for work on the topic, including questions and sub-questions. The task should be realistic, feasible and contribute to the disclosure of the main educational topic. Sub-tasks should be simpler than the main task and deal with its individual aspects.

• Process. Students receive instructions to complete the task and complete it according to the proposed stages.
• Resources. Students receive addresses of sites on the Internet, which are recommended by the teacher to complete the task on the topic.
• Performance evaluation. At this stage, students have the opportunity to evaluate their work results, compare them with the results of the work of classmates. The teacher makes his comments about the students' work.
• Conclusion. This stage is necessary for students to compare the result obtained with the goal set at the beginning of the work. Also at this stage, it is necessary for students to realize the possibility of using the acquired knowledge and skills in other areas of activity.

Foreign studies describing the experience of using mobile survey systems in the classroom call for using the capabilities of students' smartphones instead of using prohibitive measures. The advantages of using mobile survey systems include the following [4]:
- increasing interactivity in the classroom (students become more attentive to the learning process, their involvement increases, interaction and feedback are organized);
– possibility of anonymous voting;
– ease of use;
– the teacher gets the opportunity to timely fix the level of understanding of the educational material by the students, which allows you to adjust the course of the lesson.

During the approbation of mobile survey systems, researchers identified a number of disadvantages of their use in education, which are related to the fact that [5]:
– a technical failure may occur;
– there are no open questions (there are always answers);
– some students do not take the survey seriously;
– voting using mobile devices takes up time in the classroom.

Modern information technologies, including mobile and cloud ones, provide new opportunities for organizing interaction between participants in the learning process. Thus, mobile technologies have an impact on teaching methods, as they provide new means for organizing the activities of both the teacher and the student, changing the mechanism of the student's movement towards the goal. The technological basis influences the implementation of the teaching method; accordingly, to describe the teaching method means to describe the following components [6]:
- didactic purpose;
- technological basis;
- criterion for achieving the goal.

Most of the mobile technology-based learning methods discussed below can be used not only in computer science lessons.

CONCLUSION

To build a system of teaching methods for informatics based on mobile technologies, on the one hand, it is necessary to systematize them, highlight the features and principles of building the system, determine the place of each method in terms of the thematic content of the course; on the other hand, to test the system in a real educational process.

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